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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/559,507	12/05/2005	Manfred Hubinger	HUBINGER M ET AL 2 PCT	3822
25889	7590	11/23/2009	EXAMINER	
COLLARD & ROE, P.C. 1077 NORTHERN BOULEVARD ROSLYN, NY 11576			RALIS, STEPHEN J	
			ART UNIT	PAPER NUMBER
			3742	
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			11/23/2009	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/559,507	<b>Applicant(s)</b> HUBINGER ET AL.	
	<b>Examiner</b> STEPHEN J. RALIS	<b>Art Unit</b> 3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 21 August 2009.
- 2a) ☒ This action is **FINAL**.                      2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 5,6 and 8-14 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 5,6 and 8-14 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 05 December 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                    | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____                                      |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)         | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                          |

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1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.
2. Applicant is respectfully requested to provide a location within the disclosure to support any further amendments to the claims due to when filing an amendment an applicant should show support in the original disclosure for new or amended claims. See MPEP § 714.02 and § 2163.06 ("Applicant should specifically point out the support for any amendments made to the disclosure.").

### ***Response to Amendment/Arguments***

3. Applicant's arguments filed 21 August 2009 have been fully considered but they are not persuasive as set forth below.

### ***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.

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4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
6. Claims 10-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Noble (U.S. Patent No. 1,508,713) in view of Reinking (German Publication No. DE 3120721 A).

Noble discloses a welding torch (arc welding apparatus) having a central axis (see line correlating to the axis of the electrode 6; see Figures 1, 3) comprising: a torch body (electrode delivery device 4); a drive unit (rolls 17; page 2, lines 6-87; see Figures 1, 3) for conveying a welding wire (electrode 6) at different wire-conveying speeds or for a forward/rearward wire conveyance; a hose pack (flexible guide tube 7) connected at a connection region to the torch body at an angle of up to 90 degrees relative to the central axis (backend of ball socket type joint 22; page 2, lines 96-105); and **a wire buffer storage (front end of ball socket type joint 22; page 2, lines 96-105; see Figures 1, 3)** arranged immediately after the connection region within the torch body, the wire buffer storage (front end of ball socket type joint 22; page 2, lines 96-105; see Figures 1, 3) containing a portion of the welding wire (electrode 6), the portion following a curved course between the connection region and the drive unit (see Figure 3), the portion of the welding wire contained in the wire buffer storage being adjustable by a change of the curved course.

With respect to the limitation of a portion of the welding wire contained in the wire buffer storage being adjustable by a change of the curved course, Noble discloses the ball socket joint (22) being rotatable (page 2, lines 96-105; see Figures 1, 3). Since the ball socket joint (22) is rotatable and the welding wire (electrode 6) is within the wire

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buffer storage (front end of ball socket type joint 22; page 2, lines 96-105; see Figures 1, 3), the portion of the welding wire (electrode 6) is implicitly adjustable by a change of the curved course by the rotation of the ball socket joint (22). Therefore, Noble fully meets “the portion of the welding wire contained in said wire buffer storage being adjustable by a change of said curved course” given its broadest reasonable interpretation.

With respect to the limitations of claim 10, Noble discloses the welding wire (electrode 6) being unguided and the interior of the ball socket joint (22) as limit elements arranged in the torch body (body (electrode delivery device 4) to delimit the curved course of the unguided welding wire. Therefore, Noble fully meets “the welding wire is unguided and wherein limit elements are arranged in the torch body to delimit the curved course of the unguided welding wire” given its broadest reasonable interpretation.

With respect to the limitations of claim 11, Noble discloses the connection of the hose pack (flexible guide tube 7) to the torch body (electrode delivery device 4) by the rear end of the ball socket joint (22).

With respect to the limitations of claim 12, Noble discloses the connection of the hose pack (flexible guide tube 7) to the torch body (electrode delivery device 4) by the rear end of the ball socket joint (22). Noble further discloses the ball socket joint (22) being rotatable (page 2, lines 96-105; see Figures 1, 3). Since the ball socket joint (22) is rotatable and the welding wire (electrode 6) is within the wire buffer storage (front end of ball socket type joint 22; page 2, lines 96-105; see Figures 1, 3), the amount of

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welding wire (electrode 6) is implicitly adjustable by a change of the curved course by the rotation of the ball socket joint (22). Therefore, Noble fully meets “the hose pack is arranged to be adjustable relative to the torch body so as to enable a change of the amount of welding wire contained in the wire buffer storage by such an adjustment” given its broadest reasonable interpretation.

Noble discloses all of the limitations of the claimed invention, as previously set forth, except for a sensor to detect the welding wire stored in the wire buffer storage; and the sensor being arranged between the drive unit and the connection region.

However, sensors in the wire storage loop between a drive unit and a connection region are known in the art. Reinking, for example, teaches a sensor element (11, 12) being arranged between a drive unit (pressure rollers 3, 5 in combination with draw roller 2, 4) and a connection region (connection to welding machine 9) in order to provide a means to reduce wire delivery from the system until the continuous wire intake of the welding machine uses up the surplus wire supply (English translation; Abstract), thereby increasing the operational efficiency of the welding apparatus. It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Noble with the sensing of the welding wire in the wire storage portion of Reinking in order to provide a means to reduce wire delivery from the system until the continuous wire intake of the welding machine uses up the surplus wire supply (English translation; Abstract), thereby increasing the operational efficiency of the welding apparatus.

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7. Claims 5 and 8-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lorentzen (U.S. Patent No. 5,521,355) in view of Reinking (German Publication No. DE 3120721 A).

Lorentzen discloses a welding torch (Title) having a central axis (see Figures 1, 3) comprising: a torch body (torch housing 40); a drive unit (pulling charging means 28) for conveying a welding wire (wire electrode 20) at different wire-conveying speeds or for a forward/rearward wire conveyance; a hose pack (torch cable 42) connected at a connection region (rear end of torch housing 40) to the torch body (torch housing 40) at an angle of up to 90 degrees relative to the central axis (see Figures 1, 3); and **a wire buffer storage (round region of torch housing 40 before pulling charging means 28; see Figure 3)** arranged immediately after the connection region (rear end of torch housing 40) within the torch body (torch housing 40), the wire buffer storage (round region of torch housing 40 before pulling charging means 28; see Figure 3) containing a portion of the welding wire (wire electrode 20) and being formed from a wire core (electrode 20 in conduit 104 including a flexible liner with a bore; column 7, lines 2-6; see Figure 3) with the wire core (electrode 20 in conduit 104) being arranged in an end region within the torch body so as to be freely movable in the longitudinal direction (see Figure 3), the wire core (electrode 20 in conduit 104) following a curved course (see Figure 3) between the connection region (rear end of torch housing 40) within the torch body (torch housing 40) and the drive unit (pulling charging means 28), the portion of the welding wire contained in the wire buffer storage being adjustable by a change of the curved course.

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With respect to the limitation of the amount of welding wire contained in the wire buffer storage being adjustable by a change of the curved course, Lorentzen discloses the welding wire (wire electrode 20) inside of conduit (104) being provided to the torch housing (40) via the connection region in the rear end of the torch housing (40). Since the pulling acceleration may change as well as the angle of the torch cable (42) with respect to the torch housing (40) when the welding torch assembly is in use, the amount of welding wire (wire electrode 20) is implicitly adjustable by a change of the curved course caused by the movement of the torch assembly during use. Therefore, Lorentzen fully meets "the amount of welding wire contained in said wire buffer storage being adjustable by a change of said curved course" given its broadest reasonable interpretation.

With respect to the limitations of claim 10, Lorentzen discloses the welding wire (wire electrode 20) being unguided after the drive unit (pulling charging means 28) and further being delimited by limit elements (delivery tube 122). Therefore, Lorentzen fully meets "the welding wire is unguided and wherein limit elements are arranged in the torch body to delimit the curved course of the unguided welding wire" given its broadest reasonable interpretation.

With respect to the limitations of claim 11, Lorentzen discloses the connection of the hose pack (torch cable 42) to the torch body (torch housing 40) in the rear end of the torch body (torch housing 40) (see Figure 3). Clearly, there is a coupling means to allow the torch cable (42) into torch housing (40). Therefore, Lorentzen fully meets "the



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connection of the hose pack to the torch body is realized by a coupling device" given its broadest reasonable interpretation.

With respect to the limitations of claim 12, Lorentzen discloses the connection of the hose pack (torch cable 42) to the torch body (torch housing 40) in the rear end of the torch body (torch housing 40) (see Figure 3). Again clearly, there is a coupling means to allow the torch cable (42) into torch housing (40). Furthermore through the use of the welding torch assembly, the torch cable (42) will move, thereby the welding wire (wire electrode 20) is implicitly adjustable due to the movement of the torch cable (42). Therefore, Lorentzen fully meets "the hose pack is arranged to be adjustable relative to the torch body so as to enable a change of the amount of welding wire contained in the wire buffer storage by such an adjustment" given its broadest reasonable interpretation.

Lorentzen discloses all of the limitations of the claimed invention, as previously set forth, except for a sensor to capture the welding wire stored in the wire buffer storage; the sensor being arranged between the drive unit and the connection region; and the wire core terminating immediately after the connection region.

However, sensors in the wire storage loop between a drive unit and a connection region are known in the art. Reinking, for example, teaches a sensor element (11, 12) being arranged between a drive unit (pressure rollers 3, 5 in combination with draw roller 2, 4) and a connection region (connection to welding machine 9) in order to provide a means to reduce wire delivery from the system until the continuous wire

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intake of the welding machine uses up the surplus wire supply (English translation; Abstract), thereby increasing the operational efficiency of the welding apparatus.

It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify Lorentzen with the sensing of the welding wire in the wire storage portion of Reinking in order to provide a means to reduce wire delivery from the system until the continuous wire intake of the welding machine uses up the surplus wire supply (English translation; Abstract), thereby increasing the operational efficiency of the welding apparatus. In addition, it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the location of where the wire core terminates to immediately after the connection region, since it has been held that rearranging parts of an invention involves only routine skill in the art. Furthermore, to provide the wire core terminating immediately after the connection region would have been a mere engineering expediency as it would be obvious to try different location of the termination of the wire core with respect to the connection region, providing predictable solutions, with a reasonable expectation of success.

8. Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lorentzen (U.S. Patent No. 5,521,355) in view of Reinking (German Publication No. DE 3120721 A) as applied to claims 4, 5 and 7-14 above, and further in view of Ide et al. (Japanese Publication No. JP 57134276 A).

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Lorentzen in view of Reinking discloses all of the claimed limitations, as previously set forth, except for the sensor comprising at least one coil surrounding an indicator and having an inductance that is changeable by the position of the indicator.

However, a sensor comprising at least one coil surrounding and indicator and having an inductance that is changeable by the position of the indicator is known in the art. Ide et al., for example, teach a detector for projecting the length of a core wire in which the sensor (7a, 7b) comprise at least one coil (solenoid coils 7a, 7b) surrounding an indicator (core wire) and having an inductance that is changeable by the position of the indicator (wire core). Ide et al. further teach that such a configuration provides a means to detect the length of the core wire with high accuracy, thereby increasing the operational efficiency of the welding apparatus (English translation; Abstract). It would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the sensor arrangement of Lorentzen in view of Reinking with the indicator/coil arrangement of Ide et al. in order to provide a means to detect the length of the core wire with high accuracy, thereby increasing the operational efficiency of the welding apparatus.

### ***Remarks***

9. With respect to applicant's reply/argument that there is no wire buffer storage in Noble and that the flexible guide tube is the wire buffer storage, the examiner respectfully disagrees. First, the examiner has explicitly asserted previously and above that:

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“Noble discloses a welding torch (arc welding apparatus) having a central axis (see line correlating to the axis of the electrode 6; see Figures 1, 3) comprising: a torch body (electrode delivery device 4); a drive unit (rolls 17; page 2, lines 6-87; see Figures 1, 3) for conveying a welding wire (electrode 6) at different wire-conveying speeds or for a forward/rearward wire conveyance; a hose pack (flexible guide tube 7) connected at a connection region to the torch body at an angle of up to 90 degrees relative to the central axis (backend of ball socket type joint 22; page 2, lines 96-105); and **a wire buffer storage (front end of ball socket type joint 22; page 2, lines 96-105; see Figures 1, 3)** arranged immediately after the connection region within the torch body,...

The examiner has provide applicant with a structural element correlation of the backend of ball socket type joint (22) of Noble to the wire buffer storage of applicant given its broadest reasonable interpretation, not a correlation of the flexible guide tube (7) of Noble to the wire buffer storage of applicant. The flexible guide tube (7) of Noble is a structural element correlation to the hose pack of applicant.

In that regard, Noble explicitly discloses a wire buffer storage (front end of ball socket type joint 22; page 2, lines 96-105; see Figures 1, 3) arranged immediately after the connection region within the torch body, the wire buffer storage (front end of ball socket type joint 22; page 2, lines 96-105; see Figures 1, 3) containing a portion of the welding wire (electrode 6). Noble further discloses the ball socket joint (22) being rotatable (page 2, lines 96-105; see Figures 1, 3). Since the ball socket joint (22) is rotatable and the welding wire (electrode 6) is within the wire buffer storage (front end of ball socket type joint 22; page 2, lines 96-105; see Figures 1, 3), the portion of the welding wire (electrode 6) is implicitly adjustable by a change of the curved course by the rotation of the ball socket joint (22). Therefore, Noble fully meets “the portion of the welding wire contained in said wire buffer storage being adjustable by a change of said curved course” given its broadest reasonable interpretation.

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10. With respect to applicant's reply/argument that there is no wire buffer storage in Lorentzen, the examiner respectfully disagrees. Lorentzen explicitly discloses a wire buffer storage (round region of torch housing 40 before pulling charging means 28; see Figure 3) containing a portion of the welding wire (wire electrode 20) and being formed from a wire core (electrode 20 in conduit 104 including a flexible liner with a bore; column 7, lines 2-6; see Figure 3). Lorentzen further discloses the welding wire (wire electrode 20) inside of conduit (104) being provided to the torch housing (40) via the connection region in the rear end of the torch housing (40). Since the pulling acceleration may change as well as the angle of the torch cable (42) with respect to the torch housing (40) when the welding torch assembly is in use, the portion of the welding wire (wire electrode 20) is implicitly adjustable by a change of the curved course caused by the movement of the torch assembly during use.

With respect to applicant's reply/argument that Lorentzen does not have the ability to store a certain amount of welding wire within the torch housing (40) even if torch housing (40) were to move a little bit, the examiner respectfully disagrees. Lorentzen discloses the torch housing (40) moving a little bit and the conduit (104) with the welding wire (20) therein changing direction or being stored in the torch housing (40) as it moves a little bit as is designated by the curve in the conduit (104) in Figure 3. Further movement in one direction or the other will either implicitly provide further curvature to the conduit (104) with the welding wire (20) therein or straighten out the curvature in the conduit (104) with the welding wire (20) therein .

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Therefore, Lorentzen fully meets "the portion of the welding wire contained in said wire buffer storage being adjustable by a change of said curved course" given its broadest reasonable interpretation.

11. In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

In that regard, both Noble and Lorentzen disclose a welding torch in which the limitations of at least a wire buffer storage being located between a drive unit and a connection region, as asserted above. Reinking teaches placing a sensor between a drive unit and connection means in order to provide a means to reduce wire delivery from the system until the continuous wire intake of the welding machine uses up the surplus wire supply (English translation; Abstract), thereby increasing the operational efficiency of the welding apparatus. The examiner has established a *prima facie* case of obviousness as set forth in MPEP § 2143, therefore, the rejection stands as asserted above.

***Conclusion***

12. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to STEPHEN J. RALIS whose telephone number is (571)272-6227. The examiner can normally be reached on Monday - Friday, 8:00-5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tu Hoang can be reached on 571-272-4780. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Stephen J Ralis/  
Examiner, Art Unit 3742

Stephen J Ralis  
Examiner  
Art Unit 3742

SJR  
November 20, 2009